

Union Carbide Corporation,
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Oak Ridge, Tennessee 37830

Characterization of Animal Inhalation Exposure Devices.

The purposes of this program are to collaborate in the development of advanced tobacco smoke inhalation exposure methods and to provide chemical and physical characterization of tobacco smoke offered by exposure devices of interest to The Council for Tobacco Research - U.S.A., Inc. Carefully defined exposure devices and methods are critical to the proper design and final interpretation of biological studies requiring inhalation dosing with whole smoke. Experimental studies will emphasize (a) in-depth characterization and evaluation of the Process and Instruments Smoke Exposure Machine (SEM) II, (b) completion of ongoing studies to characterize the Walton Horizontal smoking machine, and (c) initiation of a chemical/instrumentation support activity to provide control and documentation of chronic mouse inhalation experiments.

The Process and Instruments SEM II, now in the final stages of construction, will receive a thorough operational characterization and evaluation to establish the practicality and reliability of the system for large-scale inhalation exposures. The following operational features will be investigated: humidity and temperature of puffing and purge air, consistency of dome pressure, practicality and reliability of puff-volume calibration method, system components reliability under heavy usage, operational ease, and service and cleaning requirements.

Activation Date: May 10, 1976

Current Contract Level: \$290,000.

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